



## From Gods to Goddesses

David Alis, Luchien Karsten, John Leopold

### ► To cite this version:

David Alis, Luchien Karsten, John Leopold. From Gods to Goddesses. *Time & Society*, 2006, 15 (1), pp.81-104. 10.1177/0961463X06062280 . hal-00571011

**HAL Id: hal-00571011**

**<https://hal.science/hal-00571011>**

Submitted on 1 Mar 2011

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

## **From Gods to Goddesses**

### ***Horai* management as an approach to coordinating working hours**

**David Alis, Luchien Karsten and John Leopold**

---

**ABSTRACT.** Flexibility in working time arrangements may lead to heterogeneity of working-time patterns. Drawing on the societal perspective, we consider three interrelated spheres of: professional relations, organizational, and domestic space. Greek mythology assists us to contrast chrono management and *Horai* management. Case analyses of France, the UK, and the Netherlands are presented within the context of EU Directives. By introducing *Horai* management we try to find an expression for the dialectical interplay between the temporalities of the home and the workplace, while including developments in the wider societal context. *Horai* management helps us reach beyond the logic of time-economy to improve the coordination of multiple temporalities. **KEY WORDS** • working time • France • Netherlands • UK • *Horai* management

### **Introduction**

In response to rapid changes in technology and global market pressures, flexibilization and destandardization have become buzzwords and have created a 'mania for deregulation' (Garhammer, 1995: 198). But such developments may have negative consequences for workers. Arbitrariness in working-hour arrangements at company level can become common practice and lead to a heterogeneity of working-time patterns. On the other hand, the European Union, by issuing various directives to harmonize working conditions, protect employees and prevent inter-

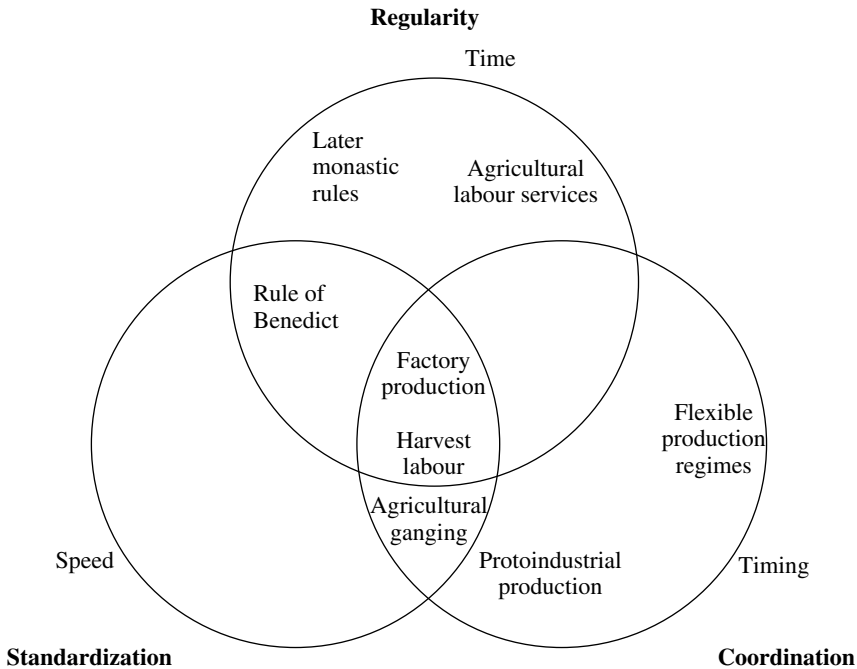
national competition between firms by way of social dumping, has to some extent enclosed this process of divergence. We summarize different patterns of working time in three European countries – France, United Kingdom and the Netherlands – from the societal approach perspective to understand the distinctive trajectories for improving work–life balance. Using an allegory drawn from ancient Greek mythology we suggest the need for *Horai* management as a means of allowing (social) actors in different socioeconomic spaces to deal with the increasing heterogeneity of working-time arrangements, and we illustrate how this might work in practice.

### Convergence or Divergence?

The industrialized world is apparently moving away from the once generally embraced combined notion of regularity, standardization and coordination, which, during the industrialization of western society, arranged working-time patterns uniformly. Over the centuries, the clock has dramatically influenced the organization of social life ‘by shifting the emphasis of every day living and working patterns from variable rhythms to invariant ones’ (Adam, 1995: 47).

It took many decades before the first clocks were standardized. In the 16th century, dials were added to clocks and later 12 equally spaced numbers were included. But what was not agreed upon was whether the first hour of the day began at sunset, midnight, or sunrise. ‘It was not until the Gregorian calendar was adopted in 1582 that the day was officially divided into twenty-four equinoctial hours beginning at midnight, and the position of XII at the top of the dial for mid-day made general’ (Price, 1993: 170). Technical advances made the mastering of time possible through devices such as gas lighting, telegraphy, railroad timetables, telephones and cars. In this way time became reified and led to chronotechnology (Kern, 1983; Agacinski, 2003). It is, however, undeniable that notions of regularity, standardization and coordination have been culturally determined and have led to different institutional frameworks, and are therefore liable to shift under specific sociocultural changes. Nevertheless, the establishment of the standard working week and standard working day has been central to the evolution of modern employment systems in the western world.

As Glennie and Thrift (1996) have shown, time awareness and time orientation, which in everyday life structure our living patterns in a regular way, did not have to wait for the introduction of the factory system. Nor did the need for coordination arise only once the standardized factory production had become a general feature. Glennie and Thrift illustrate this with the help of a Venn diagram showing how regularity, standardization and coordination have, throughout the history of the industrializing western world, created interconnected relationships which have varied over time (Figure 1).



Source: adapted from Glennie and Thrift, 1996.

**FIGURE 1**  
**Examples of different forms of time discipline**

The management of time has concentrated on scheduling time patterns by encouraging 'temporal complementarity among temporally asymmetric worlds' (Zerubavel, 1981: 60). Household hours, however, are structured by sequences of tasks rather than quantities of time. Harvey (1999) believes that 'the use of chronometric time as a standard, and unique, measure of activities structured within diverse temporalities, runs the risk of reductionism, and of wrongly equating an hour spent under one temporal organization with an hour spent in another' (p. 23). He therefore questions the assumption 'that time in one domain can in any simple or straightforward manner be traded or exchanged with time in another domain' (p. 35).

It cannot be denied, however, that mechanisation, standardization and routinization in industrial production led to a situation where people began to attach greater attention to the world of work forcing family time to accommodate to the pressure of work. Family time thus began to take an industrial tone (Hochschild,

1997). It was believed that a methodical, reliable, disciplined bourgeois citizen would become the ideal industrial worker in a rational bureaucratized society (Casey, 1995: 7). This development did nonetheless have its limits.

One of the most remarkable sociocultural results of the interconnectedness between regularity, standardization and coordination has been the introduction of the eight-hour day. It has regulated the division between labour time and free time, supported the standardization of working hours and synchronized shop-floor activities (Karsten, 1989). However, the industrialized world is currently undergoing a process of desynchronization, which means that the so-called flexible production regimes 'involve much more intense coordination, but sharply diminished requirements for standardisation and regularity' (Glennie and Thrift, 1996: 287). We might say that the triptych individualism /heterogeneity/irregularity begins to replace the former one (Boulin, 1992).

National institutional frameworks have, so far, embedded traditional and modern forms of the three-pronged intensity of time discipline, as depicted in the Venn diagram. For more than two centuries there has been a steady reduction in the time spent at work, a decline that has been regulated by both collective agreements and legislation (Blair et al., 2001). At the same time, however, Taylorism, Fordism, and Toyotaism reinforced the drive for efficiency. Increase in efficiency and reduction of working hours seem to go hand in hand. Although from country to country the details may differ, the general direction was the same: working time diminished.

The transformation Toyotaism created was to offer employees much more flexibility in performing tasks. In this system, co-workers reporting a defect of some sort are given control over production. By pulling an overhead cord they summon a supervisor to investigate the problem and they decide jointly whether the line needs to stop (Tsutsui, 1998; Donkin, 2001). The Japanese car-manufacturing work organization began to rely on this flexibility in job demarcation. Toyotaism introduced just-in-time policies at the level of production, marketing and sales. Time-based competition created new company strategies reinforcing the tendency to flexibilization.

This flexibilization, however, is beginning to change the general development of working time. The increase of non-standard, deregulated and irregular forms of employment will not fit the existing temporal schemes of standard employment and coordination mechanisms. In the organizational space of businesses, striving for more flexibility will create new forms of organizational practice matching new working-time patterns such as those necessitated by part-time work.

At the same time, a new managerial discourse is being introduced which focuses on the employees as individuals who seek self-fulfilment in their life. This 'responsibilization' of the self intends to lead to a series of technologies of regulation which 'make work an essential element in the path of self-fulfilment

and provides the a-priori that links together work and non-work life' (Du Gay, 1996: 65). In order to better understand the effects of flexibilization within the European context, we need to use the societal approach to study how embedded working-time arrangements are within them.

### **The Societal Approach**

In the 1980s the societal approach, based on a cross-cultural point of view, became popular. This perspective resisted simultaneously models which explained socioeconomic development using a framework that pretended universal applicability and ignored country and actor specificities within particular institutional settings, and, simultaneously resisted those approaches that underlined cultural differences as providing the main explanation of their perspective. O'Reilly (2000) states that: 'the societal effect represented a significant challenge to universal theories about the process of modernisation and industrialisation resulting in convergence. It challenged the assumptions that technological determinism, capitalism or . . . globalization, would produce similar effects in modern industrial societies' (p. 343).

This approach argues that socialization processes, through historically embedded institutions, produce a distinct societal effect in the organization of work in different countries (Maurice and Sorge, 2000). It admits that certain practices among human beings can take on something of a life of their own once they have become part of everyday life. In the case of working-time arrangements we can notice that although 'certain time-competences can become increasingly independent from the particular sources of time-discipline from which they originate' (Glennie and Thrift, 1996: 289), it is still up to (groups of) actors to decide whether or not specific patterns and habits will be reproduced. With Théret (2000) we can therefore say that societies are the result of the interplay between social actors within three orders of practice which have their own repertoires of action:

- the political order which is governed by power accumulation;
- the economic order which is determined by the repertoire of capital accumulation;
- the domestic order which is determined by social reproduction.

We do not agree with Théret, however, that these orders of practice survive through their own logic. Rather, we argue that they arise out of interplay between social actors.

The persistence of a society based on these three orders is dependent upon a set of institutions ensuring the functional reproduction of each order, but is at the same time determined by social actors who reproduce the repertoires of action

while creating tensions, paradoxes and incongruences. Every society therefore needs communication mechanisms between the social actors to uphold the regimes of regulation of the three separate orders and a mode for regulating the society at large, in order to articulate all these regimes within a historically situated territorial space. With the increasing drive for flexibilization, the need for coordination and therefore communication has intensified.

We have transferred this general societal perspective to the specific repertoire of working-time arrangements in order to understand its specific developments:

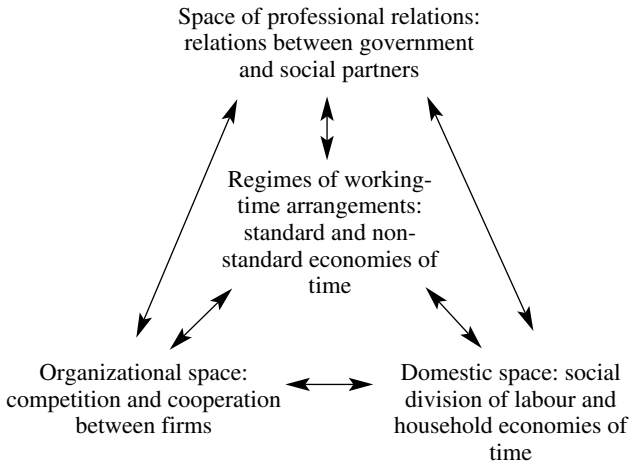
- the space of professional relations is constituted by the social partners: employers organizations, trade unions and state authorities. They are, in varying constellations, involved in discussing and arranging working-time patterns;
- the organizational space examines the strategies of firms and sectors to improve their competitiveness. Firms are structured according to the clock-time regime which facilitates context independence and global standardization. Organizations develop repertoires of rules, structures and forms of action to meet the varying rhythms of demand, competition and regulation;
- the domestic space focuses on 'the dialectical interplay between the task-oriented time of the home and the clock time of activities in the workplace' (Ingold, 1995: 17).

Harvey (1999: 22–3) has clearly identified that the concept of time prevalent in the domain of organizational space cannot simply be transferred to the domestic space. He comes to the conclusion that the temporal coordination, sequencing and articulation of work, whether paid or unpaid, formal or informal, establish diverse regularities and cycles and thereby constitute particular temporalities. Firms begin to understand the effects of this dialectic by providing family-friendly policies, which potentially makes them more attractive to potential employees.

To illustrate the interdependencies of the three spaces which begin to manifest themselves in the development of new working hours arrangements, we have designed Figure 2.

The societal approach places significant emphasis on divergence and this is reflected in varieties of national policies. In order to demonstrate this, we have selected three countries: France, United Kingdom and the Netherlands. Each country represents a different form which illustrates in its own way the applicability of our framework.

To present the three countries we used the typology of the various working-time regimes proposed by Anxo and O'Reilly (2000, 2002). This typology is useful for understanding how working-time regulations reflect different industrial relations traditions, differences in bargaining systems and also the various strategies and goals of social actors with regard to working-time issues.



**FIGURE 2**  
**The interrelationships between the three socioeconomic spaces**

France can be defined as 'statist flexibility'. As Anxo and O'Reilly (2000: 66) show, the French state remains the main architect of change in the light of discord among trade unions, as well as between trade unions and employers' organizations. Statutory regulation governs the use of flexible employment conditions and the introduction of innovative working-time patterns. Even if there is a move away from 'statist' regulation to a more decentralized, sectoral approach which gives local actors more scope for manoeuvre (Lallement, 1997), we do agree with Anxo and O'Reilly (2000) that the introduction of the 35-hour week can be seen as an example of adaptation and continuity within the dirigist and statist flexibility tradition.

Although Anxo and O'Reilly (2000) call the UK system 'external constrained voluntarism', we prefer to call it 'individualized flexibility'. The UK is characterized by an individualized flexibility as this country has historically inherited a voluntaristic form of industrial relations which emphasize the unions' right to free collective bargaining. The very wide spectrum of working-time patterns (significant share of workers found in very long or very short-hour jobs) reflects, according to Anxo and O'Reilly (p. 75), the absence of statutory working-time regulation, the weakening of industrial relations and the low priority given to working-time reductions by the trade unions.

Anxo and O'Reilly describe the Netherlands as 'negotiated flexibility' (p. 73). Involvement of the social partners through negotiations characterizes this negotiated flexibility system with a moderate level of statutory working-



time regulation. This provides basic protection but leaves room for a strong tradition of collective bargaining. The social partners jealously guard their autonomy, and decision making is highly centralized and coordinated. We have designed the Table 1 inspired by the work on Anxo and O'Reilly (2000, 2002) but link this to the three-spaces model of Figure 2.

The actual regimes of working-hour arrangements, outlined in Table 1, exemplify the relationships depicted in Figure 2 but only describe a static situation in the national context. It looks as if these regimes are simply the result of interaction between the three spaces we have discerned. The more these regimes are determined by irregularity, heterogeneity and individualism, the more the dominance of organizational space will increase at the expense of domestic and professional space. To regulate a proper balance between work and private life, we suggest that *Horai* management should be developed to put in place a co-ordination mechanism that prevents the negative effects of responsabilization as defined by Du Gay (1996). *Horai* management refers to a normative inspiration which finds its origin in classical Greek mythology and can be seen as a refinement of *Chrono* management.

### **From *Chrono* Management to *Horai* Management**

Clock-time, the organisational time-frame and structure of industrial production, is governed by the non-temporal principle of time, a time that tracks and measures motion but is indifferent to change . . . As such, clock-time forms an integral part of contemporary western societies' time consciousness. Time efficiency, time budgeting, time management, they all belong to the clock-time conceptualisation of time. (Adam, 1995: 52)

Within this context, managers seek a unifying orientation to time, in an attempt to master it. They are driven by the holy trinity:

- to measure is to know;
- to know is to predict;
- to predict is to control.

They therefore impose organizational rules like time-ordering systems to establish a compelling image of the future (Rifkin, 1987: 123). It is their purpose to convince employees to sacrifice their own time so that they might gain access to something lying beyond their immediate time horizon. But by focusing on clock-time frameworks only, managers disregard temporalities that fall outside the hegemony of reified time. We might call this approach *Chrono* management with an emphasis on a standard, regular conception of working time, where coordination is from the top down.

Organizations, however, have to deal with an increasing variety of working-

**TABLE 1**  
**Time regimes in three societies and spaces**

	Professional space	Organizational space	Domestic space
France: Statist flexibility	<p>Edict on working time (1982): statutory max 39 hours/week, 10 hours/day, 552 hours over 12 weeks.</p> <p>Edict on working time, Aubry Law (1998): statutory max 35 hours/week, 10 hours/day, 552 hours over 12 weeks, 1600 hours/year; 217 days/year.</p> <p>The 35-hour law is in fact a 1600-hours-a-year law. General reduction of working time in order to benefit employment. Since the 1990s, encouraged by the European Union</p> <p>Initiatives on regulating working time, the French government has encouraged social partners to find negotiated compromises by the statutory introduction of financial incentives for the conclusion of decentralized collective agreements.</p>	<p>Within the overall policy aim of promoting working-time reductions, fostering more flexible working-time patterns at the firm level and improving employment prospects, collective agreements at industry level enable firms to deviate from the statutory norm and also introduce annual working hours (50,000 agreements in the Aubry Law).</p> <p>Statist flexibility characterized by relatively strong statutory regulations due to weak articulation between the two sides of industry. Relatively high concentration of employees working around the statutory norm.</p>	<p>Part time for women and low qualified service increased to 17 per cent of the work force in 2003.</p> <p>Since the implementation of the Aubry Law, blue-collar workers are more concerned with annual working hours, work on weekends and evening.</p> <p>Executives and employees benefit from 11 to 23 days off.</p> <p>Greater intensification of work for all workers. A split between those employees who were already benefiting, before the implementation of the 35-hour law, from family-friendly policies at the workplace and those who were working in less family-friendly environments where working schedules do not fit well with childcare arrangements.</p>
UK: Individualized flexibility	<p>No general working time legislation until belatedly. The European working-time directive (WTD) was implemented in 1998, establishing a max 48-hour week but with a number of exemptions and deregulations built into the legislation. Currently the EU is deciding whether or not the clause allowing individual opt-outs should continue or not.</p>	<p>The organizational space is still being dominated by externally constrained voluntarism. Working-time regulation through individual employment contracts or collective bargaining at the sector or firm level. Development of flexibility at the firm and sector level. Weak regulatory environment. Wide dispersion of working time.</p>	<p>Extensive use of both part-time and temporary workers.</p>

*continues*

**TABLE 1 (cont.)**  
**Time regimes in three societies and spaces**

	Professional space	Organizational space	Domestic space
The Netherlands: Negotiated flexibility	<p>Working time regulated since 1919. Current Working Hours Act (1996): standard regulation; 9 hours a day, 45 hours/week, 520 hours over 13 weeks; consultation regulation 10 hours a day, no max. Weekly working time is 200 hours over 4 weeks, 585 hours over 13 weeks, which still reflects a labour supply-oriented working-time policy. Government set up the Daily Routine Commission with the aim of making recommendations for how people, and, in particular, parents with children, could tie up the time-related loose ends such that it would be possible to combine work and childcare duties. Recent discussions in parliament have indicated an inclination to extend the standard regulation to a max. 60 hours per week.</p>	<p>Negotiated reductions of working time during the early 1980s. Collective agreements stipulate shorter working hours (36 hours). If no agreement is reached, the standard regulations apply. Negotiated flexibility, characterized by weak statutory regulation and strong regulation of working time through collective agreements. Relatively high dispersion of working time due to disparities between bargaining areas.</p>	<p>The Dutch approach favours the development of large part-time and flexible working-time patterns at firm level. Holland quickly became the forerunner in part-time work. People are striving for a work-life reconciliation in their own situation. Their demand is the basis, not the supply-oriented solution of professionals. A bottom-up approach is favoured; reinventing society from the bottom up. Government is asked to support people's individual choices for living their lives. In the case studied, only one activity was stressed. This also differed for men and women in their learning, work and care duties. The culture of combination is promoted through personal arrangements which provide the opportunity for people to save leave and time, so that those who lead a busy life can more easily work less and have more time to do paid work when less time is required for care duties. The Netherlands are no longer characterized by a breadwinner model, but by the one-and-a-half wage-earner-family.</p>

*Source:* adapted from Anxo and O'Reilly (2000: 64–6).

time arrangements which ask for an integration of flexibility *of* and flexibility *for* employees (Elchardus and Heyvaert, 1990). This diversity is the result of the changing attitudes of employees, trying to cope with interdependencies between labour time and care time, working hours and training and so on.

People encounter ever greater difficulties in co-ordinating the flexible and inflexible elements of their lives of work, family, friends, leisure, cultural activities, public amenities use and political engagement. The more flexible and/or unpredictable the work pattern, the more time has to be spent by those involved and their families on the task of synchronisation. (Adam, 1995: 104)

Management, however, is trained to effectively apply the 'time is money' dictum. This implies that they only focus on Taylorism, Fordism and Toyotaism as tools to speed up production processes and increase efficiency. With processes of flexibilization and destandardization – as we have depicted – management will have to operate 'with a complexity of different times and in multiple time frames where the context-specific timing and tempo of interactions and transactions matter . . . The weaving in and out of different forms of time is an accomplishment that tends not to form part of the explicit repertoire of management tools' (Whipp et al., 2002: 17).

Following the advice of Adam (2004) that mythical tales remain pertinent because they enable us to confront aspects of time that have tended to slip out of sight in industrial society, we have chosen to weave these time frames together using an allegory from Greek mythology. We would like to introduce the concept of deification of time by introducing the concept of *Horai* management, which reaches beyond *Chrono* management (Box 1).

If Chrono management is appropriate to a period of standardized, regular, coordinated time, then *Horai* management becomes appropriate for destandardized, irregular, coordinated time frames (Ettighoffer and Blanc, 1998). *Horai* management confines batches of hours to particular tasks and develops a sensitivity for multiple temporalities and different time arrangements. *Horai* management respects the fact that employees have to match different chronological time regimes ruling in different social spaces. These chronological time regimes will be influenced by the biological rhythms of the workers' bodies. 'This embodied time is lived and experienced alongside, despite and in conflict with the culturally constituted social relations of time' (Whipp et al., 2002: 11).

The physical power of human beings varies according to age and should not be perceived as a uniform source of energy. As Rabinbach (1990) eloquently illustrated, the concept of work as the equivalent of energy emerged at the end of the 19th century and dominated views of work throughout the 20th century: 'the identification of nature with energy harmonized with the dynamic belief in the production powers of newly harnessed sources of energy: electricity, electromagnetism, internal combustion, steam and the new technologies of the age – railroads and the factory' (pp. 55–6).

### BOX 1

#### Chronus and the Horai in Greek mythology

According to Greek mythology, as long as Uranus (the sky) weighed down on Gaia (the Earth) they remained enfolded. From the moment Uranus withdrew, the Titans were born. One of them, Chronus, was able to castrate his father, Uranus, and so achieved a fundamental stage in the birth of the cosmos; he separated the sky and earth forever. Between sky and earth a free space and time were created. Because he was afraid that he might be subdued by a similar experience, Chronus tried to devour his own offspring. Zeus, Poseidon and Pluto escaped from this ordeal and partitioned the world. Subsequently Zeus took Themis – the goddess for justice and reasonableness – as his wife and she gave birth to the Horai: Dike, Eirene and Eunomia. Every day the Horai assisted Chronus to harness the horses of the sun-chariot. The Horai stood for the variety in the length of daylight caused by changes in the seasons.

The Greeks felt that hours (Horai) had different qualities. The task of the Horai was to make time roll on between birth and death, and beyond, and make sure that people gathered the fruits of their toil at the right moment. These three inseparable sisters represented Justice, Peace and Harmony and secured the welfare of Greek society. Their presence reflected a social interest as they watched over the works of the mortals and gave them the wealth they deserved.

With industrialization and the dominance of Chrono management, the role of the Horai withered away. The hours lost their feminine features of a secure habitat in modern western culture and began to take a more masculine shape as is illustrated by this poem that was distributed by a British general to his troops in the trenches during the First World War:

The Seconds that tick as the clock moves along  
Are Privates who march with a spirit so strong  
The Minutes are Captains. The Hours of the day  
Are Officers brave, who lead in the fray.

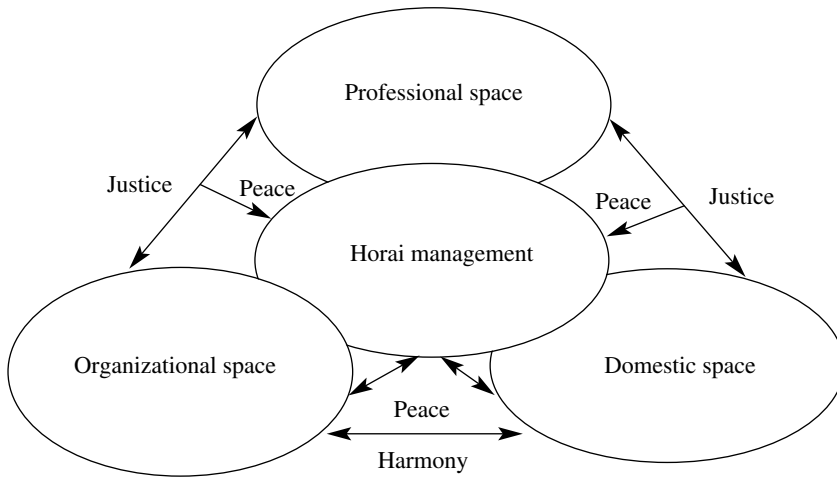
*Sources:* Kern (1983: 289), Onians (1988), Vidal-Naquet (1991), Moorman and Uitterhoeve (1992), Duncan (1998), Vernant (1999).

The existence of multiple chronological codes in organizations suggests that, rather than time being independent of events – as time management does by using a language that bears the hallmarks of a homogeneous ordering of time, amendable to singular, rational measurement of speed (Whipp, 1994) – it is actually shaped by events: time is in the events. Clark (1990) assumes that organizational time is based on heterogeneous codes derived from diverse discontinuous social events to meet the varying rhythms of demand, competition and regulation, including those from the reproductive space. Instead of a homogeneous time upon which the structure of an organization is based (i.e. clock-time patterns with their regular events), *Horai* management focuses on trajectories of events which will respect interactions between organizational and reproductive time patterns in a broader context (Bluedorn and Denhardt, 1988).

The purpose of *Horai* management is to strengthen the ability to cope with multiple chronological codes within organizations and tune them with those between the three spaces we introduced in Figure 2. *Horai* management especially invites managers to broaden their scope on time and stand up to the pragmatic time arrangements employees are striving for. *Horai* management is meant to find effective combinations of flexibilization within the workplace, and time sovereignty from the employee perspective. Perlow (1998), for example, has shown how ‘time famine’ has been caused in American companies. She studied how, in particular firms, the fast-paced, high-pressure, crisis-filled environment caused time famine. Among software engineers it turned out that management responsible for these engineers systematically created demands for interaction time to solve problems jointly. The engineers themselves, however, needed quiet time to finish their own assignments. By changing the management style, limiting these interaction times and scheduling them at particular hours, the time famine among the engineers diminished while they obtained more hours for their own work.

A study by Goff et al. (1990) showed that levels of absenteeism decreased when conflicts between work and life could be prevented and sovereignty was respected. When demands of work and family can be made compatible, absenteeism will apparently diminish (Jansen, 2003). These recent studies emphasize the role of the individual in regulating their own working time and therefore the relationship between organizational and domestic space. However, we believe that the virtue of *Horai* management in considering the interdependencies between all three spaces simultaneously recognizes the need to consider the individual and suggests a continuing role for state and jointly negotiated regulation.

These relationships are depicted in Figure 3. Having established this need for *Horai* management as an approach to manage the interface between the temporally asymmetric domains of organizational and domestic space mediated through the space of professional relations, and through these interactions to



**FIGURE 3**  
**Horai management and its relationship to socioeconomic space**

establish peace, justice and harmony, we can now use this to illustrate our argument through some examples of three European countries: France, the UK, and the Netherlands.

### **France: Statist Flexibility**

Reductions in working time in 1982 and 1998 were seen as tools to reduce mass employment. As seen in Table 2, French firms used the compulsory regulation of the 35-hour week in the late 1990s to improve productivity and develop new work patterns (Alis, 2001).

The consequences of the 35-hour week on working conditions and ways of life are not well known. Has the 35-hour week contributed to a better *Horai* management in France? The answer is mixed. Meda (2001) has shed light on the contribution of the reduction in working hours to a new distribution of social and family roles and to a better balance between work and family life. Other researchers underline the risks of deterioration in working conditions. Askenazy (2000) shows how, in their effort to bring together the 35-hour week, re-engineering, and lean production, companies run the risk of worsening working conditions, adding to workloads and increasing the risks of accidents and occupational illnesses.

**TABLE 2**  
**The terms and conditions of work reorganization in France**

The terms and conditions of work reorganization	% of firms concerned
Systems based on changes in working hours (modulation, variable hours, etc.)	47.5
Redeployment of skills (flexibility, specialization, etc.)	24.4
Increases in business hours	20.5
Increases in the period of use of the equipment (shift work, etc.)	16.0
Development of certain company functions (sales, R&D, etc.)	16.0
Readjustment of the staff age pyramid	7.4
Other terms and conditions (redevelopment of the production sites, changes in management methods, quality control, installation of new equipment, computerization, development of training schemes, etc.)	13.7

*Source:* French Ministry of Work. Figures as of 8 March 2000.

The research of Fagnani (2003) into the recipients of six different Local Family Allowance Funds (CAF) provides interesting insights. Among this sample ( $N = 3216$ ), the researchers were able to focus on parents who worked an average of 35 hours a week and who had at least one child aged under six. He found that

parents appear to have benefited much more from the reduction in working time when their working schedules have been negotiated with their employer or chosen by themselves. On the contrary, when the organisation of working time has been imposed on them, only half of them say that it is easier than before to balance their job and their family life (compared to respectively 66 per cent and 63 per cent). These parents often work in companies where flexibility associated with largely unpredictable (or given at short notice), atypical and variable working hours, has been imposed to enhance organisational effectiveness. Therefore for them, the WTR [Working Time Reduction] has not offset the drawbacks entailed by the change in working schedules and sometimes, it has even aggravated their childcare organisation . . . (p. 3)

So reducing the working time is not *per se* a means to achieving balance of a job and family life.

Another measure taken by the French government clearly contributed to better *Horai* management at the firm and individual level: 'paternity leave', 11 days off paid by the French social security for fathers. The problem is to link such general measures as the 35-hour week and parental leave at the macro level with *Horai* management at the micro level. In the French situation, it becomes clear that a legal framework, 'justice', dominates further development of work-



ing hours arrangements. The initiative of city councils clearly shows how local political bodies can play an important and initial role.

It was noticed that in France a conjunction manifests itself between 'the (recent) discovery of the importance of day-to-day quality of life and the (old) pre-occupation of the state with supporting the (economic) development of a region' (Ministry of Social Affairs and Employment, 2004: 49). The case of several cities like Rennes is provided to illustrate how city councils set up time offices to improve access to the existing infrastructures of their towns for families and initiate new policies to deal with the increasing desynchronization which unfairly penalizes women. 'It is clear that sustainable solutions to improve time reconciliation require businesses (large, medium, and small) to take better account of their employees' needs for flexibility, to integrate the concept of well-being of their employees into their human resources management' (p. 51). This is where *Horai* management becomes relevant. It can make the social responsibility of the firm compatible with improving effectiveness in the domestic space.

Even if local political bodies take the initiative, some big companies can also take similar initiatives such as the Accor Group 'well-being à la carte programme':

The Accor Group (one and a half million employees in 31 countries) quickly understood the benefit of being an 'attractive' employer and playing the 'social responsibility' card. Its human resources managers deliberately opted for a policy of continuous training for staff, of taking account of its employees' working-hours expectations and a range of services for its employees. The gain is a reduction in staff turnover and absenteeism. The range of services – either at home or at the workplace – is very wide and covers everyday life (ironing, housework, deliveries), childcare (babysitting, educational support, looking after sick children) and care for elderly people (remote assistance, care at home), computer support (installation, maintenance, training at home), practical life (administrative, tax and legal matters, etc.). The services are easy to access: one phone number, one email address, a dedicated web site and so on. The costs are at market rate or slightly less. Nevertheless there is a dream that these services will be available not just to employees of the hotel chain, but also to people living in the vicinity. (Ministry of Social Affairs and Employment, 2004: 51)

### **UK: Individualized Flexibility**

Prior to the Working Time Directive, Britain had the highest proportion of full-time employees working more than 48 hours and still continues to have a high proportion of people working long hours. When the European Working Time Directive was first introduced in 1993, the then Conservative government sought to block its application to Britain. This was unsuccessful but the way in

which the Labour government introduced the legislation meant that there were a number of exemptions and derogations. The key element here was the ability to opt out of the 48-hour maximum week through collective agreements or, more importantly, individual opt-outs. Recent figures suggest that as many as one-third of British workers have signed opt-outs although there is a debate about the extent to which this is 'voluntary' or not. Dex (2003: 77) concluded that 'the decline of unions probably paved the way for a faster movement away from standard hours and contracts than might otherwise have occurred' and the weakness of trade union opposition meant that employees could more easily be persuaded to sign opt-outs. Currently this ability to agree opt-outs is under review by the European Commission with employers' organizations strongly in favour of continuing the policy, and trade unions firmly against (TUC, 2003; CIPD, 2004a).

Legislation in 1999 and 2001 implemented the parental leave directive, gave parents a limited right to request flexible working arrangements, introduced paid paternity leave, and extended provision for maternity leave and pay. At the level of the firm the Labour government has attempted to encourage employer initiatives through its Work-Life Balance Campaign. One example is the retailer Asda which tried to address its high costs of absence through extending its flexible working practices. It now offers employees options on flexible working such as 'shift swaps' for family and domestic reasons, 'store swaps' for students who study in one place and go home in the holidays and 'Benidorm' and 'grand-parents' leave for its older workers. Through this it hopes to reduce absence and turnover and increase the attractiveness of the firm to new employees.

Family-friendly policies in firms have been given legislative support through the right, since 2003, for parents to request flexible working. While initial fears from some employers that such a right would be disruptive have proved unfounded, with over 80 per cent of all requests being granted, the debate has now moved on to whether the right should be extended to all workers and not just parents of young children (Dex, 2003; CIPD, 2004b). These British examples illustrate the point that *Horai* management should be seen as a shared responsibility, with employees and employers being able to reach satisfactory agreements on work-life balance within a framework regulated by the state.

### **The Netherlands: Negotiated Flexibility**

The Working Time Directive was implemented in 1996 with a dual regime of a standard and a consultative regulation. Through a consultative arrangement, deviations from the legal standards are allowed by collective agreement, or at company level between employers and work councils.

There are tensions between the unions and their inability to negotiate overall

working time at the sectoral level, and the work councils' ability to agree specific working-time regimes at the workplace level. Employment structures in the Netherlands are characterized by the 'one and a half' wage-earner model, with many women now working in 'large' part-time jobs of over 25 hours (Visser, 1998). The Dutch context illustrates an in-between situation. The government supports initiatives from the bottom up and sees to it that general support can be established.

The retailer Vroom & Dreesman introduced, with the support of a computerized planning system, a flexibilization policy to remove under- and over-staffing. This development towards more flexibilization has introduced within general labour agreements a new phenomenon called the 'day window'. The extension of working hours within the day is no longer compensated for with bonuses. Work done within the extended time frame is no longer perceived as deviating. Overall working hours have been shortened while hourly payments have been increased, thus benefiting employees, while working hours have become more flexible and labour time out of hours has become cheaper and easier to arrange, thus benefiting employers.

Research from the Daily Routine Commission (2004) shows that, due to a lack of day care centres, 87 per cent of mothers (but only 27 per cent of fathers) have to reduce their working hours. The biggest obstacle for working parents is the lack of 'day arrangements' for their children, that is, provision of localities where children participate in a full-day programme of teaching, sport and cultural activities. This forced decision making, in general, hampers the career perspectives of women, although the career perspectives of women in management functions rose from 6 per cent in 1995 to 13 per cent in 2002 (Tiedeman, 2002).

An interesting example, which illustrates our ideas about *Horai* management is the initiative of the university medical hospital of Utrecht which in 2003 introduced a special mothers' contract to fine-tune operation planning with the child-care duties of mothers/trained nurses. The contract included matching working hours with school hours: free on Wednesdays and during all school holidays. The effect was that 20 new staff and two extra operating theatres came into use. The objective of recruiting new operation personnel was attained and attracted people to return to their profession.

### **The European Directives**

The European Union can also influence and foster *Horai* management. Within the European Union the central platform for human resource issues is the 1989 Community Charter of the Fundamental Social Rights of Workers (Social Charter), and the Social Action Programme to implement it. In the 1990s the

influence of interventionists grew as well as the willingness among the social partners of the EU to start a social dialogue to create flexible labour markets and promote entrepreneurship and job creation in order to solve problems of unemployment. This finally led to the 1997 Amsterdam Treaty, which introduced an Employment Chapter into the EC Treaty while also encouraging entrepreneurial freedom and more flexible labour markets.

Within this framework, the Working Time Directive (WTD) was adopted in November 1993. Its main provisions were intended to limit maximum working hours and establish minimum entitlements to rest periods and paid annual leave for most workers in the EU. Most member states had national working-hour legislations in place, which were more restrictive than the WTD. The WTD has all kinds of implications upon the interdependencies between the three social spaces introduced earlier. The societal approach framework, however, has to be extended to include the impact of the WTD and other European Union directives that might affect these relationships. Directives on parental leave (1996), part-time work (1997), fixed-term employment (1999), labour arranged by agencies (2001), and telework (2002) can also be seen as steps which reinforce processes of convergence and have an influence on the relationships between the three spaces.

The latest initiative is a Report of the Employment Taskforce (2003) – which was installed by the European Commission in March 2003 and chaired by Wim Kok – to come up with new initiatives to boost employment and productivity. One key requirement is to increase the adaptability of workers and enterprises. The Taskforce recognizes that for workers ‘working life is becoming more complex as working patterns become more diverse and irregular’ (p. 19). To prevent flexibilization only being in the interest of employers and leading to just-in-time HRM, initiatives should be taken to ‘combine work with care and education’ and ‘ensure greater participation in training throughout working life’ (pp. 9–10). Increased flexibility should, however, not lead to increased insecurity.

The European directives have an effect on convergence in working-time patterns and on *Horai* management. The societal approach has so far focused more on comparative studies between countries, trying to locate divergence. The influence of the European Union has not yet found a proper place in this approach. The European Union has to be perceived as an entity promoting convergence. Although any EU directive will have to be transcribed into the national system of industrial relations, it still plays an overarching role. The importing of regulations by a supranational body will reinforce convergent tendencies but it cannot be denied that these regulations will at the same time lead to divergent responses. The effect will be a strengthening of interdependencies between convergent and divergent tendencies.

## Conclusion

Recently a report was published of the project 'European Daily Routine Arrangements' about reconciliation of work and private life. The project was launched in 2002, financed by the European Commission and co-financed by the Dutch Ministry of Social Affairs and Employment. Four countries (Finland, France, Italy and Holland) and eight partners worked together to study the needs of people to combine work and private life. The team noticed that:

people are looking for flexibility in work, shop opening hours, facilities, schools, childcare, care for elderly parents, living and transport. It is not just the government (local, regional or national) that is responsible for this. Citizens themselves and employers, project developers, shop owners, or providers of facilities are also responsible. (p. 5)

In our terms, *Horai* management is a shared responsibility.

We have tried to indicate how flexibilization begins to change well-known patterns between standardization, regularity and coordination as exhibited in Figure 1. Adam (1995) has summarized this by saying:

the mechanism behind the time-economy is to be efficient and to produce something or to perform a task in the shortest possible time. To be profitable is to spend as little money as possible on labour-time. To be competitive is to be faster than your rival is. In Western societies efficiency, profitability and competitiveness all carry a positive value. (p. 100)

This chain of work–time–money–efficiency–profit has created a remarkable increase in the wealth of nations. The embedding of this chain into modern civil society, however, has led to developments which have detrimental effects on the domestic space and increased coordination problems between organizational and domestic space as well as within the organizational space itself.

Firms will continue to strive for flexibility in order to comply with the logic of the time economy. Technological developments, the 24-hour world economy, and firms operating globally reinforce this logic of the time economy. The introduction of the European Working Time Directive, and other related directives, to match social with economic developments, can be seen as steps which reinforce processes of convergence. They do so, however, by promoting the social dialogue about common European practice in industrial relations.

However, as any European directive has to be translated into national practices, the three countries we studied indicate that processes of divergence still dominate due to differences in the sets of norms and values, industrial relations and the particular role of institutions, prevalent at the level of the professional space, and organizational space, as much as of the domestic space. Together they embed, limit and/or enhance certain kinds of flexibility. Dynamism, that is, the speed of change and complexity, will determine the main characteristics of

embeddedness. Whatever the outcome, the integration of processes of convergence and divergence can only be realized within the context of a civil society. The topic of working-time arrangements can only be addressed seriously if organizations start to deal with *Horai* management and reach beyond the logic of time economy.

Some interesting examples begin to illustrate these changes. Semler (2003) shows that in the SEMCO companies employees enjoy the opportunity to rearrange their work and divide the seven days among company time, personal time and free time. They are free to customize their workdays, and their working hours are determined by self-interest, not by company dictates. Semler believes that 'anyone who can eliminate the stress of an over-taxed schedule, arrange her work so she can sleep according to her bio-rhythm, rather than a clock time, and enjoy a sunny Monday on the beach after working through a chilly Sunday will be a much more productive worker' (p. 23). He does not make clear, however, what kind of role that management has played in this change.

The latest developments concerning flexibility have shown the need to improve the coordination of multiple temporalities like times of paid work, leisure, school needs, shopping, caring, and voluntary work commitments:

When there is a need to coordinate multiple times then we begin to see that not all times are equal, that some times are clearly privileged and deemed more important than others. This differential treatment of times becomes visible in the sequencing and prioritising of certain times and in the compromises in time allocation that have to be achieved on a daily basis. (Adam et al., 2000: 95–7)

In order to stimulate situations where women and men can make appropriate choices a 'culture of combining' now becomes the rule. The core of daily routine; combining work, care, study and leisure time, with lifecycle policies, is to respect the life phase of the individual and to adopt the new requirements of a modern civil society, in which standard roles are vanishing and where the need for flexible choices is growing. 'People in the rush hour of their lives can more easily work less, while having more time to do paid work when less time is required for care duties' (Ministry of Social Affairs and Employment, 2004: 100). The Dutch phrase *levensloop* (pattern of working life) captures the essence of these new arrangements between work and private life, or between the organizational and domestic spaces.

By introducing *Horai* management as a new concept that promotes time as a habitat, not only as a money-driven phenomenon (Hochschild, 1997), we tentatively try to find an expression for the dialectical interplay between the temporalities of the home and the workplace while including developments in the wider societal context. This concept is not meant to reinforce principles of control as they are traditionally being practised in the time economy. Instead we believe that, with *Horai* management, coordination of working-time arrangements can be trusted to those directly involved. As the ancient Greeks believed, through the

*Horai*, the principles of Justice, Peace and Harmony go together. The *Horai* also help us link *Horai* management back to our three spaces of analysis within which it is embedded. Justice is the role of social partners and the state regulating working time in the sphere of professional relations. Harmony represents work–life balance, or the balance of the interests of the organizational and domestic spaces. Peace represents the regimes of working time established through the interactions of the actors in the three spaces and ensures that no one is able to pursue their own ambitions at the expense of the public good.

Greek mythology also warns us of the consequences of not achieving a proper work–life balance. Chronus ate his children, and a continuation of *Chrono* management will find us burning ourselves up.

## References

- Adam, B. (1995) *Timewatch: The Social Analysis of Time*. Cambridge: Polity Press.
- Adam, B., Beck, U. and Van Loon, J. (eds) (2000) *The Risk Society and Beyond: Critical Issues for Social Theory*. London: SAGE Publications.
- Adam, B. (2004) *Time*. Cambridge: Polity Press.
- Agacinski, S. (2003) *Time Passing*. New York: Columbia University Press.
- Alis, D. (2001) *Réduire et aménager le temps de travail. Pourquoi? Comment?* Paris: Editions l'Harmattan.
- Anxo, D. and O'Reilly, J. (2000) 'Working-time Regimes and Transitions in Comparative Perspective', in J. O'Reilly, I. Cebrian and M. Lallement (eds) *Working Time Changes: Social Integration through Transitional Labour Market*, pp. 61–76. Cheltenham: Edward Elgar.
- Anxo, D. and O'Reilly, J. (2002) 'Working-time Transition and Transitional Labour Markets', in G. Schmid and B. Gazier (eds) *The Dynamic of Full Employment: Social Integration by Transitional Labour Market*, pp. 339–64. Cheltenham: Edward Elgar.
- Askenazy P. (2000) 'Reduction du temps de travail: Organisation et conditions de travail', *Revue Economique* 51(3): 1–96
- Blair, A., Karsten, L. and Leopold, J. (2001) 'The European Working Time Directive and Its Effect on Flexibility Within Organisations: A British–Dutch Comparative Analysis', in G. Morello, B. Adams and I. Sabelis (eds) *Time and Management*, pp. 195–217. Palermo: ISIDA.
- Bluedorn, A. C. and Denhardt, R. B. (1988) 'Time and Organisations', *Journal of Management* 14(2): 299–320.
- Boulin, J. Y. (1992) 'Les politiques du temps de travail en France: la perte du sens', *Futuribles* 165–166(5): 41–62.
- Boulin, J. Y., Cette, G. and Taddéi, D. (1993) *Le temps de travail*. Paris: Editions Syros.
- Casey, C. (1995) *Work, Self and Society*. London: Routledge.
- CIPD (2004a) *Impact*. Issue 7. London: CIPD.
- CIPD (2004b) *Impact*. Issue 8. London: CIPD.
- Clark, P. (1990) 'Chronological Codes and Organisational Analysis', in J. Hassard and D. Pym (eds) *The Theory and Philosophy of Organisations*, pp. 137–163. London: Routledge.

- Daily Routine Commission Conference Report (2004) Daily Routine Project/DCE. pp. 1–64. The Hague.
- Dex, S. (2003) *Families and Work in the Twenty-first Century*. York: Joseph Rowntree Foundation.
- Donkin, R. (2001) *Blood Sweat and Tears: The Evolution of Work*. New York: Texere.
- Du Gay P. (1996) *Consumption and Identity at Work*. London: SAGE Publications.
- Duncan, D. E. (1998) *The Calendar*. London: Fourth Estate.
- Elchardus, M. and Heyvaert, P. (1990) *Soepel, flexibel en ongebonden: een vergelijking van twee laat-moderne generaties*. Brussels: VUB Press.
- Employment Taskforce (2003) *Jobs, Jobs, Jobs: Creating More Employment in Europe*. Brussels: European Commission.
- Ettighoffer D. and Blanc, G. (1998) *Le syndrome de Chronos: Du mal travailler au mal vivre*. Paris: Dunod.
- Fagnani, J. (2003) *The French 35-hour Working Law and the Work-Life Balance of Parents: Friends or Foes?* London: London School of Economics.
- Garhammer, M. (1995) 'Changes in Working Hours in Germany', *Time & Society* 4(2): 167–203.
- Glennie, P. and Thrift, N. (1996) 'Reworking E. P. Thompson's "Time, Work-discipline and Industrial Capitalism"', *Time & Society* 5(3): 275–99.
- Goff, S. J., Mount, M. K. and Jamison, R. L. (1990) 'Employer Supported Childcare, Work, Family Conflict and Absenteeism', *Personnel Psychology* 34(4): 793–809.
- Harvey, M. (1999) 'Economics of Time: A Framework for Analysing the Restructuring of Employment Relations', in A. Felstead and N. Jewson (eds) *Global Trends in Flexible Labour*, pp. 21–42. London: Macmillan.
- Hochschild, A. R. (1997) *The Time Bind: When Work Becomes Home and Home Becomes Work*. New York: Metropolitan Books.
- Ingold, T. (1995) 'Work, Time and Industry', *Time & Society* 14(1): 5–28.
- Jansen, N. W. H. (2003) *Working Time Arrangements, Work-Family Conflict and Fatigue*. PhD Thesis, University of Maastricht.
- Karsten, L. (1989) *De achturendag*. Amsterdam: International Institute of Social History Publications.
- Kern, S. (1983) *The Culture of Time and Space 1880–1918*. London: Weidenfeld and Nicholson.
- Lallement, M. (1997) 'Du gouvernement à la gouvernance de l'emploi', *Cahiers Internationaux de Sociologie* CIII: 295–311.
- Maurice, M. and Sorge, A. (2000) *Embedding Organizations*. Amsterdam: John Benjamins.
- Meda, D. (2001) *Le temps des femmes*. Paris: Flammarion.
- Ministry of Social Affairs and Employment (2004) *Reconciliation of Work and Private Life: Policy and Good Practices in Finland, France, Italy and The Netherlands*. The Hague: Ministry of Social Affairs and Employment.
- Moorman, F. N. and Uitterhoeve, W. (1992) *Van Achilles tot Zeus*. Nijmegen: SUN.
- O'Reilly, J. (2000) 'Is It Time to Gender the Societal Effect?', in M. Maurice and A. Sorge (eds) *Embedding Organizations*. Amsterdam: John Benjamins.
- Onians, R. B. (1988) *The Origins of European Thought*. Cambridge: Cambridge University Press.
- Perlow, L. A. (1998) 'Boundary Control: The Social Ordering of Work and Family Time in a High-tech Corporation', *Administrative Science Quarterly* 43: 328–57.



- Price, P. (1993) *Bells and Man*. Oxford: Oxford University Press.
- Rabinbach, A. (1990) *The Human Motor*. New York: Basic Books.
- Rifkin, J. (1987) *Time Wars*. New York: Simon and Schuster.
- Semler, R. (2003) *The Seven Day Weekend*. London: Century.
- Théret, B. (2000) 'Theoretical Problems in International Comparisons', in M. Maurice and A. Sorge (eds) *Embedding Organisations*, pp. 101–115. Amsterdam: John Benjamins.
- Tiedeman, E. (2002) 'Twee Careers, een Gezin', *Elsevier*, 16 November.
- Tsutsui, T. (1998) *Manufacturing Ideology: Scientific Management in Twentieth Century Japan*. Princeton, NJ: Princeton University Press.
- TUC (2003) *The Use and Necessity of Article 18.19b0 (i) of the Working Time Directive in the UK*. London: TUC.
- Vernant, J. P. (1999) *L'univers, les dieux, les hommes*. Paris: Editions du Seuil.
- Vidal-Naquet, P. (1991) 'Temps des dieux et temps des hommes', in J. P. Vernant and P. Vidal-Naquet *La Grèce ancienne, Vol. 2: L'espace et le temps*. pp. 135–63. Paris: Editions du Seuil.
- Visser J. (1998) 'Two Cheers for Corporatism, One for the Market: Industrial Relations, Wage Moderation and Job Growth in The Netherlands', *British Journal of Industrial Relations* 36(2): 269–92.
- Whipp, R. (1994) 'A Time to Be Concerned', *Time & Society* 3(1): 99–116.
- Whipp, R., Adam, B. and Sabelis, I. (eds) (2002) *Making Time: Time and Management in Modern Organizations*. Oxford: Oxford University Press.
- Zerubavel E. (1981) *Hidden Rhythms: Schedules and Calendars in Social Life*. Chicago: University of Chicago Press.

DAVID ALIS is Dean of the Institute of Business Administration at the University of Rennes 1 (IGR-IAE de Rennes), and Researcher CNRS CREM Centre for Research in Economics and Management. He is author of *Réduire et aménager le temps de travail. Pourquoi? Comment?* Editions l'Harmattan, 2001, and of *Gestion des Ressources Humaines* (with L. Sekiou & alii), Editions de Boeck université, 2001. ADDRESS: Institut de Gestion de Rennes, IGR-IAE Université de Rennes, 11 rue Jean Macé, 35000 Rennes, France.  
[email: david.alis@univ-rennes1.fr]

LUCHIEN KARSEN is Professor in Foundations of Management in the Faculty of Management and Organization at the University of Groningen, the Netherlands. His doctoral research was on the eight-hour day. ADDRESS: Faculty of Management and Organization, University of Groningen, PO Box 800, 9700 AV Groningen, the Netherlands.  
[email: L.Karsten@bdk.rug.nl]

JOHN LEOPOLD (corresponding author) is Professor of Human Resource Management and Deputy Director of the University of Newcastle upon Tyne Business School, UK. ADDRESS: University of Newcastle Business School, 5th floor Ridley Building, Claremont Road, Newcastle NE1 7RU.  
[email: john.leopold@ncl.ac.uk]